Comparison of characteristics and behaviors between MSM actively using the internet for sex in Seattle, WA and MSM not actively using the internet for sex

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Introduction

The Seattle HIV/AIDS Planning Council conducted an HIV prevention needs assessment from July through September 2006 to characterize differences in knowledge, attitudes, and high-risk behaviors of MSM who actively use the internet to meet sex partners compared to MSM who did not use the internet to meet sex partners. This information was gathered to provide data for consideration in the 2007 prevention prioritization process (a bi-annual planning process in which a committee of the Planning Council defines target group and HIV prevention intervention priorities for federal and local HIV prevention funds for King County).

Since the internet was invented in the late 1980s, more and more people living in United States are using the internet. According to one recent survey, nearly 167 million people and 62 million households (55 %) in the United States have access to the Internet (10). Without a doubt, the internet has already changed people's behaviors, including sexual behaviors (9, 14).

The impact of the internet on sexuality has been referred to as the "next sexual revolution", and is both positive and negative (8). This is especially true for men who have sex with men (MSM). While the internet can have a positive impact on the MSM population by facilitating transformation of sexual identities in a homophobic society (28), it can also indirectly have the negative effect of increasing transmission of STDs, including HIV.

However, the existing empirical research related to internet use and high risk sexual behaviors conveys a complicated picture. In terms of sample demographics, research reflects that the MSM who solicit sex from the internet tend to be younger and identify as bisexual (12,16,17,26,32,33), less educated (12,25,26), more geographically or socially isolated (24,26,32,33), and more likely to have a previous STD history (11,20,25). However, research findings have been inconclusive with regards to whether MSM who seek sex online would engage in more risky sexual behaviors than those who do not. Some research argues that MSM seeking sex partners on the internet are more likely to have more causal sex partners (4,6,14,17,20,31,33), engage in unsafe sex (4,5,6,12,14,20,31,32,33), have more exposure to non-concordant serostatus partners (5,6,11,12,17,20), and more

frequent drug use (both “soft drugs” and “hard drugs”) during sex (4,21,31). However, other research shows evidence that there is no such difference between MSM who seek sex on the internet and those who do not (6,16,21,26).

In addition to inconclusive research findings, the majority of the existing research only examines the relationships between risky sexual behaviors and MSM sub-population demographics, but does not incorporate the psychosocial factors underlying this phenomenon. Most current literature can only show who they are (the demographic data of those MSM who use the Internet to solicit sex), but give us little insight into why they are using the internet to solicit sex (i.e. their motivations or driving forces), thereby limiting the ability to determine improved prevention interventions for this population. Also, most existing literature looks at the internet as a homogenous environment and studies have primarily recruited from one or two popular MSM websites even though internet venues have dramatically changed over the past five years, and behaviors and demographics of MSM may vary significantly by website. Psychosocial factors on high risk sexual behaviors and internet use have already been addressed in other related but non-MSM focused research (2, 18, 19, 23, 1).

Locally, in Seattle and King County, there has been greater evidence of increasing MSM internet use to meet sex partners. According to the Public Health Seattle & King County HIV/AIDS program, the STD Clinic, and Gay City Health Project, in 2005, 41% of gay/bisexual men testing for HIV/STDs reported meeting their sex partner(s) on the internet. The same percentage was reported in the same year from the STD clinic. A random digit dial survey conducted in 2003 found that 23% of gay/bisexual men reported meeting their sex partners on the internet. Most recently, the STD clinic reported that 56% of all syphilis case among MSM in 2006 (n=88), met their sex partners on the internet. Only 20% of MSM diagnosed with syphilis in 2006 (n=32) met their partners in the bath houses. Each of these findings show that gay and bisexual men are significantly more likely to meet their sex partners on the internet than in bathhouse or sex clubs, whereas the reverse was apparent before widespread internet use in the late 1990’s.

The goal of this needs assessment was to compare characteristics of MSM using the internet for sex to MSM in general to MSM who meet sex partners in other venues in Seattle & King County, Washington (MSM not actively using the internet for sex). Characteristics for comparison included demographics, sexual behavior, HIV/STD testing, internet use, drug use, and involvement in the gay community. Behaviors and attitudes were also compared by sex partner type (primary, non-internet, internet).

Methods

Design

This assessment utilized a cross sectional survey administered from the end of June through October 2006. The survey instrument was developed by the Seattle HIV/AIDS Planning Council Needs Assessment Workgroup. Demographic information included age, race, sexual orientation, education level, HIV/STD status, HIV/STD testing history and frequency, and STD transmission. A series of questions assessed internet use, particularly concerning internet use to meet sex partners. Community involvement was assessed based on three questions from the "Involvement in the Gay Community Scale" developed from the University of Illinois in 1995 as part of a larger research program designed to identify both individual and community-level variables associated with HIV risk behavior among a heterogeneous group of bisexually active men (20). An additional question about use of bath house/sex parties was added to the questions from the scale for this needs assessment. The last section of the survey focused on behavior and attitude differences by sex partner type. Respondents were asked if in the last 30 days they had anal sex with one of three partner types: primary sex partner (boyfriend, partner or guy you have sex with most); non-internet sex partner (guys you did not meet on the internet [i.e. social event/gay bars/cruising parks/bathhouse]); internet sex partner (guy you had sex with whom you met on the internet). For each sex partner type, people were asked about their condom use frequency during anal sex; trust; partner HIV status; talking about HIV/STDs before sex; and drug use.

MSM Internet Profile/Advertisement Observation

In addition to distributing surveys, profiles and advertisements on five popular websites for gay/bisexual men were examined in order to determine the variance or homogeneity of behaviors, demographics, and disclosure variables by website. Twenty profiles/ads were randomly selected at five different time periods (100 profiles) from five popular MSM websites (total 500 profiles/ads). Disclosure variables recorded included: self-disclosed HIV status; requesting their potential partner's be HIV positive/negative; age; drug use; safe/unsafe sex behavior; and sexual position. "Safe sex," was recorded based on reported safe sex, condom use, or non-oral/anal sex. "Unsafe sex," was recorded based on reported "bare backing," "raw," or related term. "Drug use," was recorded based upon reported social drug use or drug use with sex, and online terminology such as "pnp" (party and play).

Sampling

Similar to methods used in related research (6, 7, 12, 26, 27, 33), this needs assessment included different recruitment methods in order to determine if different groups of respondents would be reached based on type of recruitment. Participants from both samples were limited to MSM who resided in King County which was determined by their profile/advertisement, and targeted recruitment.

Online Sample

The "online" sample was composed of MSM recruited solely on the Internet using a link that directed the participant to a survey. Depending on the interactive format of the website, different techniques were used for recruitment (i.e. sending messages, chatting or being responsive in chat rooms, or posting/advertising the survey link in an outreach worker's profile etc.). The survey was administered on popular websites frequented by MSM including gay.com, m4m4sex.com, manhunt.com, Craig's list, adam4adam.com, myspace.com, and friendster. While these are nationally-based websites, survey administration was limited to sections specifically for Seattle area MSM. Once they had completed the survey respondents clicked "submit", which anonymously re-directed the responses to a database and staff email account for data entry. The criteria for participation was that the respondent be male, resident of King County, report having sex with other men and/or identify as gay/bisexual.

Offline Sample

Assessments with "hard-to-reach" populations like gay and bisexual men are most often conducted with convenience rather than probability samples (12). Therefore, the "offline sample" of the needs assessment was recruited through face-to-face contacts by outreach staff at local popular gay bars in the Seattle/metro area. Participants were handed the survey to be returned to the outreach worker once completed. Small incentives ($3 Starbucks vouchers) were provided to help facilitate recruitment although according to outreach staff, however, almost half of the street-intercept surveys were collected from people who declined the incentive.

We defined MSM who used the internet for sex (IMSM) was defined in this needs assessment as respondents who reported one or more anal sex partners they met on the internet in the last 30 days. This was a much more conservative and higher risk definition than most literature to date in order to determine if there was a strong difference in behavior/attitude/demographics of MSM using the internet for sex

compared to MSM in general or MSM meeting partners in other venues.
The comparison group, non-Internet using MSM (non-IMSM) included MSM that did not have an internet anal sex partner in the past 30 days. This definition includes those who reported not having anal sex within the past 30 days. Significance testing was performed to ensure that inclusion of the non-anal sex group would not significantly alter the results. Statistically significant differences were measured at the $p<0.05$ level for each reported finding.

Results

A total of 308 valid surveys were completed: 142 from street/bar intercept and 166 internet surveys. The majority of IMSM (84%) were recruited from the online sample. There were no statistically significant differences in reported age, education level, race/ethnicity, sexual orientation, and HIV status between IMSM and non-IMSM.

HIV/STD testing and rates

There were no statistically significant differences reported between IMSM and non-IMSM for HIV/STD testing. Eight percent (8%) of IMSM reported having never been tested for HIV, and 9% never tested for other STDs. About 3 out of 4 IMSM tested for HIV and STDs in the past year. When asked how frequently respondents get tested for HIV/STDs, three out of four IMSM reported getting tested every year or more frequently. Five percent (5%) of IMSM reported only getting tested for HIV/STDs when they were symptomatic or sexually active.

HIV/STD rates of transmission (STDs in the last 12 months)

IMSM reported significantly higher rates of recent STD diagnosis than non-IMSM: Gonorrhea 13% vs 4%, Chlamydia 12% vs 5%, respectively; and all of the syphilis cases in the total sample were diagnosed within the IMSM group (5%).

Internet Use

IMSM were significantly more likely to go online: to meet sex partners in person (90% vs 46%); meet new friends in person, i.e. bars/clubs/events, (81% vs 38%); have cyber-sex (36% vs 19%); to get paid for sex (7% vs <1%); and to hire someone for sex (3% vs 0%).

IMSM were significantly more likely to prefer meeting sex partners on the internet versus meeting in person (81% vs 48%) for the following reasons categorized into themes: *Easier and more efficient*: to socialize, to screen people, to take rejection, to

find other gay men; *more comfortable/anonymity*: IMSM reported being shy to meet in person, more control over the interaction, more comfortable being gay, and ease/convenience from home; and *Do not like bars*: internet meeting was deemed less expensive; preference to meet guys sober online vs drunk in bars; gay community is too passive aggressive/ "clickish"/anti-social—hard to meet people in bars; or were under the age of 21. IMSM spent significantly more time on average going online to find sex partners, 8.3 hours/week versus 2.6 hours/week for the non-IMSM.

Those who preferred to meet men in person (non-IMSMS) wrote comments reflecting the following themes: *internet meeting too impersonal; not looking for sex; in a relationship/partnered; do not trust people online.*

Websites Used

The top four websites used by the IMSM group were: Craig's List 74%; Manhunt 68%; Gay.com 58%; and M4M4sex.com 29% [Note these numbers add to more than 100% because people could check multiple sites]. MSM of Color were significantly more likely to use adam4adam.com and this finding was supported with data from observing MSM internet profiles/ads across websites.

MSM Internet Profile/Advertisement Comparison by website

There was significant variance in content of profiles/ads by website (disclosure variables). Self-reported HIV status was indicated significantly most often in profiles on adam4adam.com (82%). Across all five websites people were significantly more likely to indicate their own HIV-status than requesting that their partners be HIV positive/negative. Craigslist.com had the greatest number of postings than to request the potential sex partners' HIV status (23%). "Safe," or "unsafe," sex was indicated significantly more on adam4adam.com (63%), and m4m4sex.co (100%). "Drug use," or "no drug use" was indicated most frequently on adam4adam.com (85%), and Gay.com (83%).

In the entire sample (n=500), 63 profiles/ads solicited unsafe sex as defined above. Seventy-three percent (73%) of those 63 who solicited unsafe sex came from m4m4sex.com profiles. Twenty-nine (29) profiles of the entire sample (n=500) solicited drug use. Almost half of those who solicited drug use came from profiles on adam4adam.com. Despite similarities in high levels of disclosing safe/unsafe sex on adam4adam.com (63%) and m4m4sex (83%), only 6% of those who solicited unsafe sex came from adam4adam.com, while 73% came from m4m4sex.com.

Similarly, while disclosure of drug use/no drug use was high for adam4adam.com (85%), and gay.com (83%), half of those who solicited drug use came from adam4adam.com while only 14% came from profiles on gay.com.

More specifically, of those soliciting unsafe sex in their profiles/ads (n=63), 80% were over the age of 30 with 54% indicating ages 30 to 39. Twenty-one percent (21%) of this high-risk group reported being HIV positive, 5% HIV negative, and 74% did not list their HIV status. Three percent (3%) of the unsafe sex group requested that their partner be HIV negative, 2% requested that their partner be HIV positive, and 95% did not request their partner's HIV status in their profiles/ads. Thirteen profiles/advertisements identified as HIV positive and solicited unsafe sex, 11 of which did not request their partner's HIV status. Ten percent (10%) of the unsafe sex group indicated drug use, 5% indicated no drug use, and the majority (86%) did not indicate drug use either way.

Involvement in the gay community

Questions included frequencies of involvement in the following activities: reading gay media; going to/participating in LGBT activities; going to gay bars; and going to bathhouses/sex clubs.

The majority of the sample (also self reported gay) were very involved in the gay community. There was no significant variation between IMSM and non-IMSM on participating in GLBT activities, or reading gay oriented papers/magazines. Non-IMSM went to gay bars at a significantly greater frequency, and IMSM were significantly more likely to go to the bathhouses/sex clubs/sex parties (35%) than non-IMSM (19%). Of those who participated in each of these activities 76% or greater reported seeing HIV/STD prevention messages during these activities. Of the IMSM that reported frequenting bathhouses/sex clubs/sex parties (35%), 97% reported seeing HIV/STD prevention messages at the these venues.

Behaviors and attitudes by type of sex partner (primary, internet, non-internet)

Thirty-seven percent (37%) of the sample indicated they had a primary anal sex partner (PSP) in the past 30 days, defined as "boyfriend, partner, or guy you have sex with most." Fifteen percent (15%) indicated a non-internet anal sex partner (NISP) in the past 30 days, defined as "guy(s) you did not meet on the internet (i.e. gay bars/cruising parks/bath houses." Twenty-seven percent (27%) reported having an internet anal sex partner (ISP) in the past 30 days, defined as "guy(s) you met on the internet." Thirty-nine percent (39%) of the sample reported no anal sex

partners in the past 30 days [Note, in previous discussion IMSM referred to ISP, and non-IMSM included PSP, NISP, and the group reporting no anal sex in the past 30 days]. Approximately 30% of people that reported anal sex partners they met on the internet in the past 30 days, concurrently had primary and non-internet anal sex partners in the past 30 days.

Tables 1 and 2 below illustrate reported knowledge, behaviors, and attitudes by sex partner types. MSM with internet sex partners (ISP) reported knowledge, behaviors, and attitudes similar to MSM with non-internet sex partners (NISP), but significantly different than MSM with primary sex partners (PSP). Significant variation included MSM with ISPs reporting greater levels of condom use, less trust of partners, and less knowledge of their partner's HIV status. The majority of respondents reported talking about HIV/STDs before sex and reported not using drugs before/during sex regardless of partner type.

One-third of the people who reported never using condoms during anal sex with their primary sex partners, concurrently had internet and non-internet sex partners. Half of this concurrent partner group reported using condoms with the other sex partners but half were not using condoms with these concurrent partners. Almost half of the respondents reported never using condoms with their PSP during anal sex and reported greater trust of their partners (than NISP's and ISP's) as a reason for not using condoms with greater knowledge of their sex partner's HIV status. For those respondents that reported being HIV positive and having anal sex within the past 30 days (PSP, n=19; NISP, n=12; ISP, n=13) half reported not often/never using condoms with each sex partner type.

Half of the respondents who reported that their partners were HIV positive were themselves reported that they were HIV negative. This non-concordance was reported regardless of sex partner type. The reverse non-concordance was apparent to a lesser degree (self positive with negative partner). Five respondents who were HIV positive, reported knowing that their primary sex partners were HIV negative and also reported never using condoms during anal sex with their primary sex partner.

Table 1: Knowledge, Attitude, and Behaviors by sex partner type. ***PSP=Primary Sex Partner; NISP= Non-internet sex partner; ISP= Internet sex partner***	**"Always/Most of the time"**		
	PSP	**NISP**	**ISP**
In the past 30 days, how often have you used a condom with your: (PSP n=148, NISP n=84, ISP n=110)	**49%**	**68%**	**73%**
I don't use condoms with my anal "x" sex partner because I trust what he is saying (PSP n=177, NISP n=136, ISP n=157)	**59%**	**20%**	**20%**
Having anal sex without a condom is a good way to show my trust to my: (PSP n=198, NISP n=159, ISP n=173)	**30%**	**11%**	**9%**
How often do you talk to your "x" sex partner about HIV/STDs before sex?: (PSP n=194, NISP n=156, ISP n=165)	**73%**	**65%**	**72%**
How often did you use recreational drugs with your "x" sex partner immediately before or during sex? (PSP n=209, NISP n=174, ISP n=191)	**9%**	**9%**	**8%**
Sex partner is HIV negative: (PSP n=200, NISP n=173, ISP n=174)	**73%**	**31%**	**36%**
Sex partner is HIV positive or don't know: (PSP n=200, NISP n=173, ISP n=174)	**8%**	**2%**	**4%**
Don't know sex partner's HIV status: (PSP n=200, NISP n=173, ISP n=174)	**20%**	**67%**	**60%**

Table 2: Recreational drugs used by those who reported drug use immediately before or during sex, by sex partner type

	PSP (n=55)	**NISP (n=47)**	**ISP(n=43)**
Ecstasy	**24%**	**22%**	**19%**
Poppers	**33%**	**36%**	**33%**
Crystal Meth	**20%**	**26%**	**23%**
Marijuana	**62%**	**60%**	**65%**
Crack/Cocaine	**7%**	**6%**	**5%**
Special K	**2%**	**2%**	**2%**
Heroin	**---**	**---**	**---**

Discussion

MSM using the internet for sex (IMSM), were similar demographically to non-IMSM with the majority being college educated or higher, gay-identified, HIV negative, and between the ages of 30-39. The frequency of recent STD diagnosis (gonorrhea, Chlamydia, and syphilis) was significantly greater in the IMSM group than the non-IMSM despite similar rates of HIV/STD screening between the two groups and the majority of IMSM reporting being tested for HIV/STDs in the previous year. IMSM reported greater efficiency and ease of meeting, finding, and having sex partners leading to a significant preference of meeting sex partners on the internet as opposed to other venues in person. This supports that IMSM reported on average a greater number of anal sex partners in the past 30 days.

People have speculated that internet partnerships might be safer because of the opportunity to disclose one's status and request condoms ahead of time in an advertisement or profile. Findings from this needs assessment however contradict this notion with no significant differences in risk behaviors (condom use, disclosure, drug use etc) between internet and non-internet sex partners. However, in observing profiles/ads across multiple popular websites, there is significant variance for each of these behavioral risk factors reported depending on the website. The websites most used by IMSM to find sex partners also vary dramatically from previous research indicating both: a change over time in which internet venues MSM frequent to find sex partners with the onset of new websites; and a need for more localized data on where to reach the high-risk sample of this population. Because race/ethnicity and demographics vary by site, potential prevention interventions may also need to vary by target MSM population. The results of research investigating IMSM could therefore vary depending on what websites were targeted for recruitment.

Contrary to beliefs that specialized interventions are required to reach IMSM with important prevention messages, findings from this needs assessment indicate this group is significantly more likely to also go to local bathhouses/sex clubs and also to notice HIV/STD prevention messages in these venues. Also, seventeen percent (17%) of the IMSM group were recruited from the offline sample at local bars. However, with both the online and offline sample there was a small representation of bisexual, transgender, non-gay identified MSM, and MSM of color making findings

less representative of all MSM in King County, particularly those hardest to reach. This was reflected with the entire sample reporting high levels of involvement in the gay community and no significant difference between IMSM and non-IMSM.

The frequency of condom use was significantly lower with primary sex partners than internet and non-internet sex partners. The lack of trust with internet and non-internet sex partners potentially resulted in increasing levels of condom use and the greater levels of trust with primary sex partners potentially led to less frequent condom use. While trust was significantly greater with primary sex partners, one-third of those who never used condoms with their primary sex partners had concurrent internet and non-internet sex partners. Half of this group used condoms with these concurrent partners and half did not.

Limitations

This needs assessment used a convenience sample and was not representative of all MSM or MSM using the internet for sex. The sample recruited to participate in both the online and offline sample were largely gay, Caucasian/white, educated, HIV-negative, non-drug users, over the age of 30. Also for planning purposes, the selected sample did not include MSM who resided outside of King County who were visiting Seattle. There is relatively little research from which to extrapolate survey questions, so the survey instrument was largely created based on the most useful information sought by the local HIV/AIDS Planning Council with no measures of validity/reliability. Also, because surveys were not administered as a face-to-face interview, there was no opportunity to explain or clarify what the questions were intending to ask. Respondents may have interpreted the question differently, for example, differentiating primary, internet, and non-internet sex partners may depend on how individuals interpret these partners: If a respondent was using a computer in a bathhouse to meet their sex partners; or if someone met someone in person at a bar and on the internet it might be challenging to categorize the sex partner as internet or non-internet.

Respondents tended to over-state their willingness to “talk about HIV/STDs before sex,” regardless of sex partner type (three out of four), however it is difficult to determine the meaning of this response, (i.e. profile advertisement, verbal dialogue, chat, how long before sex?, etc.) This finding also infers the more general limitation with surveys in recruiting people more vested in participating in research in general and therefore more likely to report as they “should” as opposed to responding honestly (response bias).

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